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ABSTRACT

This document is a compilation of classroom aids for teachers using statistical data appearing in World Eagle publications. Six teachers and the editors of World Eagle supplied specific examples of materials generated for classroom drills, tests, and assignments. Classroom assignments and documents are designed to teach statistical information through the use of maps, graphs, and charts that are included. One example is a step-by-step explanation of how to draw a pie chart along with a definition of such a chart. An assignment for middle school students on how to interpret a map provides a test to accompany maps used in the classroom. There are also suggestions on how to instruct students to read a table, rank order states, compute a percentage of the total, and identify selected states and countries using blank outline maps. (NL)

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Teaching
With Current Comparative Data, Graphs, and Maps

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WORLD EAGLE, INC
Publishers of Social Studies Materials
64 Washburn Avenue, Wellesley, Mass. 02181 U.S.A.

This booklet has been designed as an aid to those teachers who would welcome help as to how best to use statistical data of the type appearing in World Eagle publications.

The pages included here have been created by our editors and by six teachers who generously responded to our call for specific examples of materials they had generated for classroom drills, tests, assignments. Our deep appreciation to each of them. Listed alphabetically, they are:

Andrea M. Coulter, Assistant Professor, Department of Education, Allegheny College, Meadville, Pennsylvania. (formerly teacher and Coordinator of Social Studies, Penn-Delco School District, Aston, Pennsylvania)

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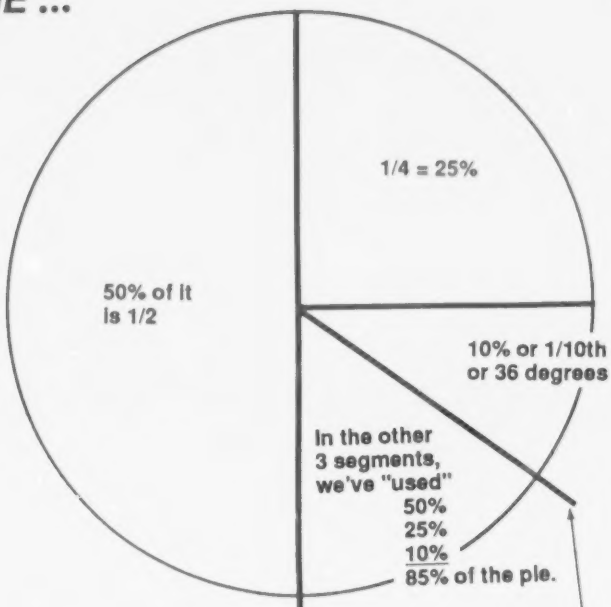
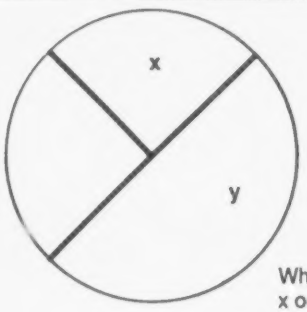
Fred Willman, 7th grade World Geography teacher, Jefferson Junior High School, Naperville, Illinois

PIE CHARTS

PURPOSE: To make sure everyone understands that a pie chart measures a totality, "a whole thing".

OF THE WHOLE PIE ...

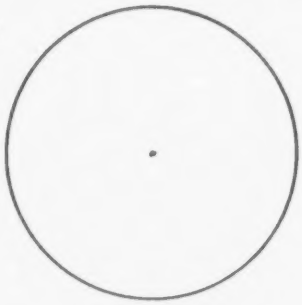

1/4 = 25%
50% of it is 1/2
10% or 1/10th of the pie, or 36 degrees of the circle
In the other 3 segments, we've "used" 50% 25% 10% 85% of the pie.
, this wedge or segment or piece ust be 15%, or 54 degrees



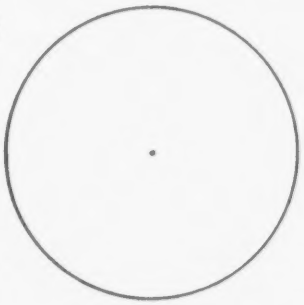
What percentage does x occupy? _____

And y? _____

(a)



(b)

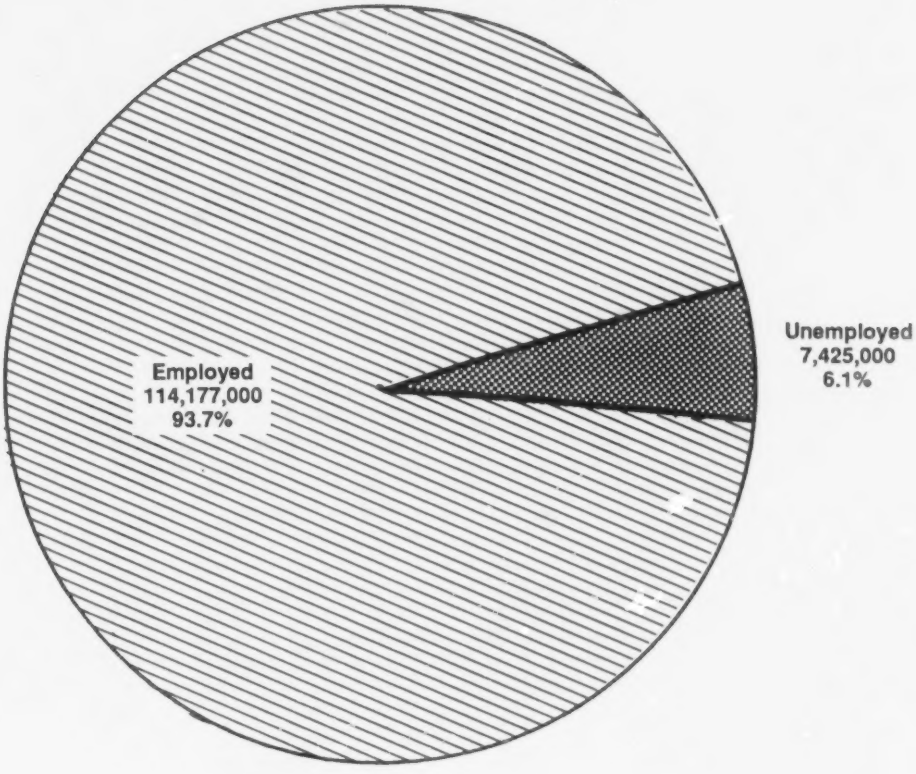


(c)

Have students use protractors to construct pie charts with following segments: (a) 25%, 25%, 50%. (b) 10%, 20%, 30%, 40%. (c) 5%, 15%, 25%, 55%.

PIE CHART

PURPOSE: To dramatize a point. In this case that 7 million-plus are a lot of people out of work, but (a) most economists believe there will always be a minimum of 2% to 3% of our Labor Force unemployed, and (b) 114 million-plus people employed are a lot of jobs.



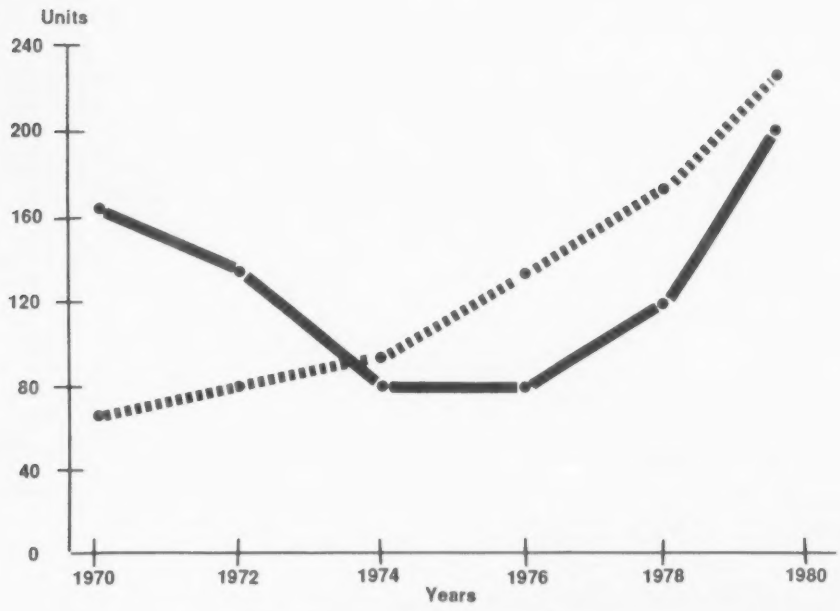
**Total U.S. Labor Force
including resident Armed Forces
for the year 1987: 121,602,000**

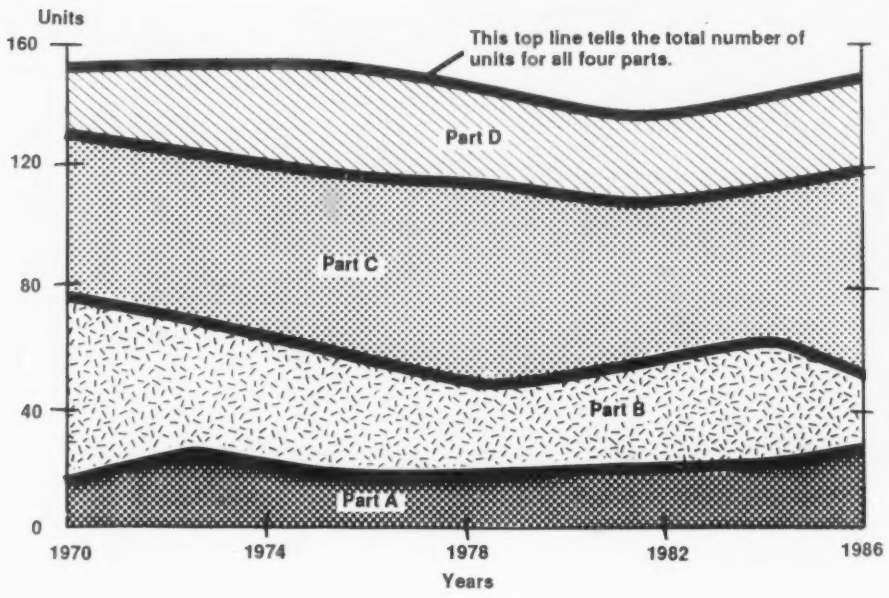
LINE GRAPHS

PURPOSE: To recognize that a line graph usually measures the continuous performance of one or more things.

A line graph can show the continuous performance of some thing. Even more than one thing. Here, the performance of two things is measured.

But a graph need not show a number for every year. Sometimes it shows numbers for selected years only. And the flat, straight line between selected years is only a connecting line; it does not reflect performance of the intervening years.





Over $2 1/2 Trillion Now, Headed for $3 Trillion in Two Years

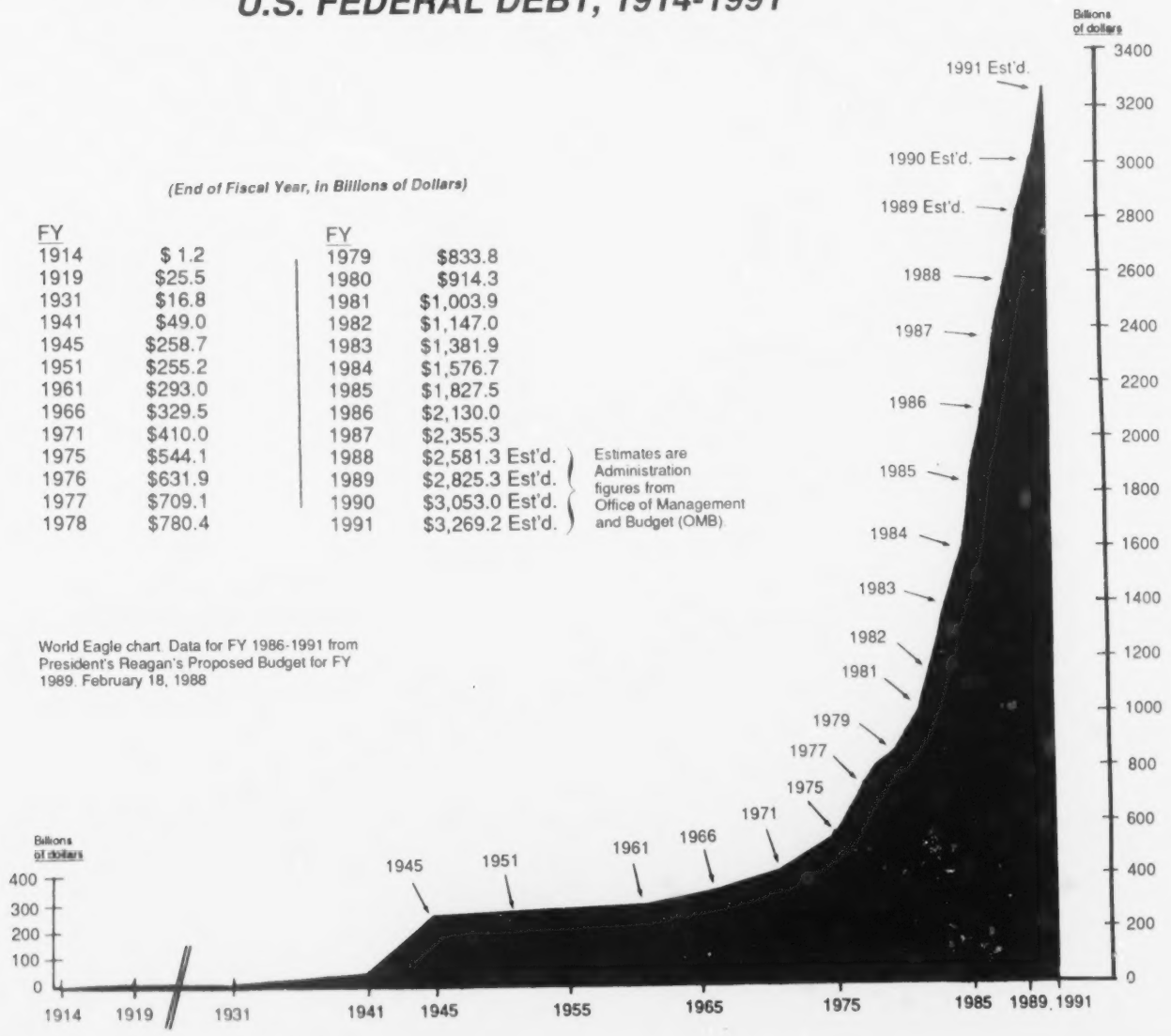
U.S. FEDERAL DEBT, 1914-1991

(End of Fiscal Year, in Billions of Dollars)

FY		FY	
1914	$ 1.2	1979	$833.8
1919	$25.5	1980	$914.3
1931	$16.8	1981	$1,003.9
1941	$49.0	1982	$1,147.0
1945	$258.7	1983	$1,381.9
1951	$255.2	1984	$1,576.7
1961	$293.0	1985	$1,827.5
1966	$329.5	1986	$2,130.0
1971	$410.0	1987	$2,355.3
1975	$544.1	1988	$2,581.3 Est'd.
1976	$631.9	1989	$2,825.3 Est'd.
1977	$709.1	1990	$3,053.0 Est'd.
1978	$780.4	1991	$3,269.2 Est'd.

Estimates are Administration figures from Office of Management and Budget (OMB).

World Eagle chart. Data for FY 1986-1991 from President's Reagan's Proposed Budget for FY 1989. February 18, 1988



PURPOSE: To dramatize a point. In this case that the U.S. Federal Debt is very large and that it has become so only recently.

BAR GRAPHS

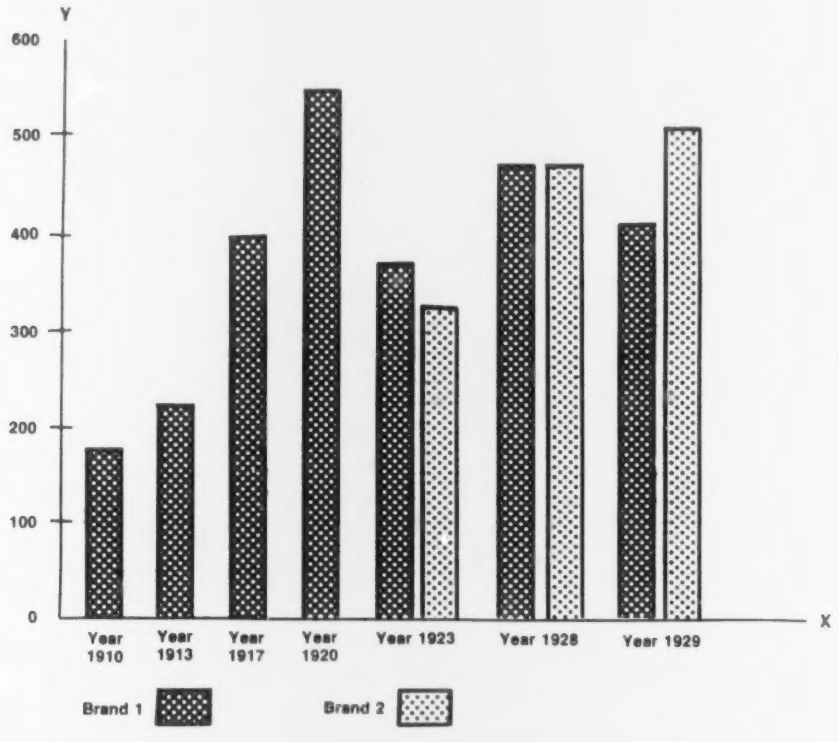
PURPOSE: To understand that a bar graph can depict a comparison at a given time, and change also if more than one date in involved.

(A) One of the things a simple bar graph can show, is comparison -- just as in a pie chart.

Sally 71 27%	Sam 22 9%	Bob 85 33%	Linda 81 31%	Total 259 100%

Can your students create a pie chart from the information in this bar graph? Do your students think the information is presented "better" in a bar graph or in a pie chart?

(B) A bar graph can also show change in addition to comparison: In the graph below, what happened to the number of units for Brand 1 in the years 1910 through 1920? _____ In 1923? _____ In 1929? _____



A bar graph is useful in showing, depicting, the number of units (produced or consumed or bought, etc.) in a sequence of time occurrences (days, weeks, months, years, etc.).

In this bar graph, the units are measured on the y axis (the upright scale) and the time occurrences are shown on the x axis (the horizontal scale).

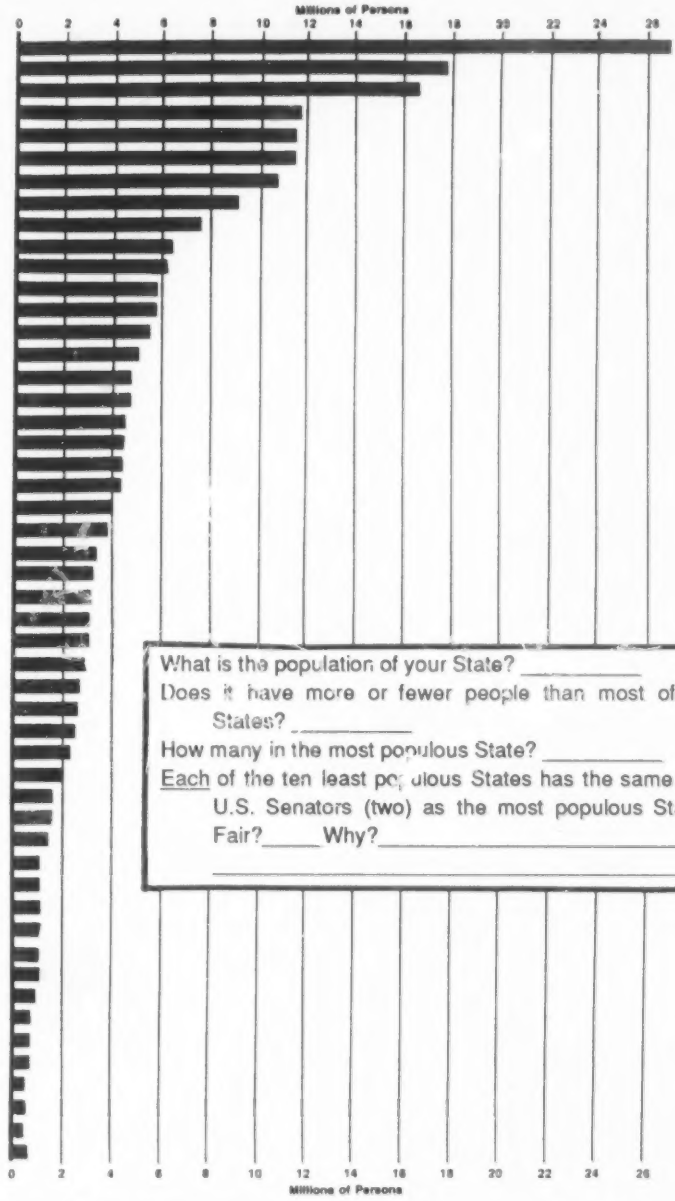
U.S. STATES RANKED BY POPULATION

PURPOSE: To show "at a glance" the population dominance of our largest States, especially California, and to permit quick comparison of one's own State with the other 49.

BAR GRAPH

Provisional Estimates of the July 1, 1986 U.S. Resident Population.

Rank	State	Population
1	CA	26,981,000
2	NY	17,772,000
3	TX	16,682,000
4	PA	11,889,000
5	FL	11,675,000
6	IL	11,553,000
7	OH	10,752,000
8	MI	9,145,000
9	NJ	7,620,000
10	NC	6,441,000
11	GA	6,104,000
12	MA	5,832,000
13	VA	5,787,000
14	IN	5,504,000
15	MO	5,066,000
16	TN	4,803,000
17	WI	4,785,000
18	LA	4,501,000
19	WA	4,463,000
20	MD	4,463,000
21	MN	4,214,000
22	AL	4,053,000
23	KY	3,728,000
24	SC	3,378,000
25	AZ	3,317,000
26	OK	3,305,000
27	CO	3,267,000
28	CT	3,189,000
29	IA	2,851,000
30	OR	2,698,000
31	MS	2,625,000
32	KS	2,461,000
33	AR	2,372,000
34	WV	1,919,000
35	UT	1,665,000
36	NE	1,598,000
37	NM	1,479,000
38	ME	1,174,000
39	HI	1,062,000
40	NH	1,027,000
41	ID	1,003,000
42	RI	975,000
43	NV	963,000
44	MT	819,000
45	SD	708,000
46	ND	679,000
47	DE	633,000
48	VT	541,000
49	AK	534,000
50	WY	507,000
	DC	626,000



What is the population of your State? _____

Does it have more or fewer people than most of the other States? _____

How many in the most populous State? _____

Each of the ten least populous States has the same number of U.S. Senators (two) as the most populous State. Is that Fair?_____ Why?_____

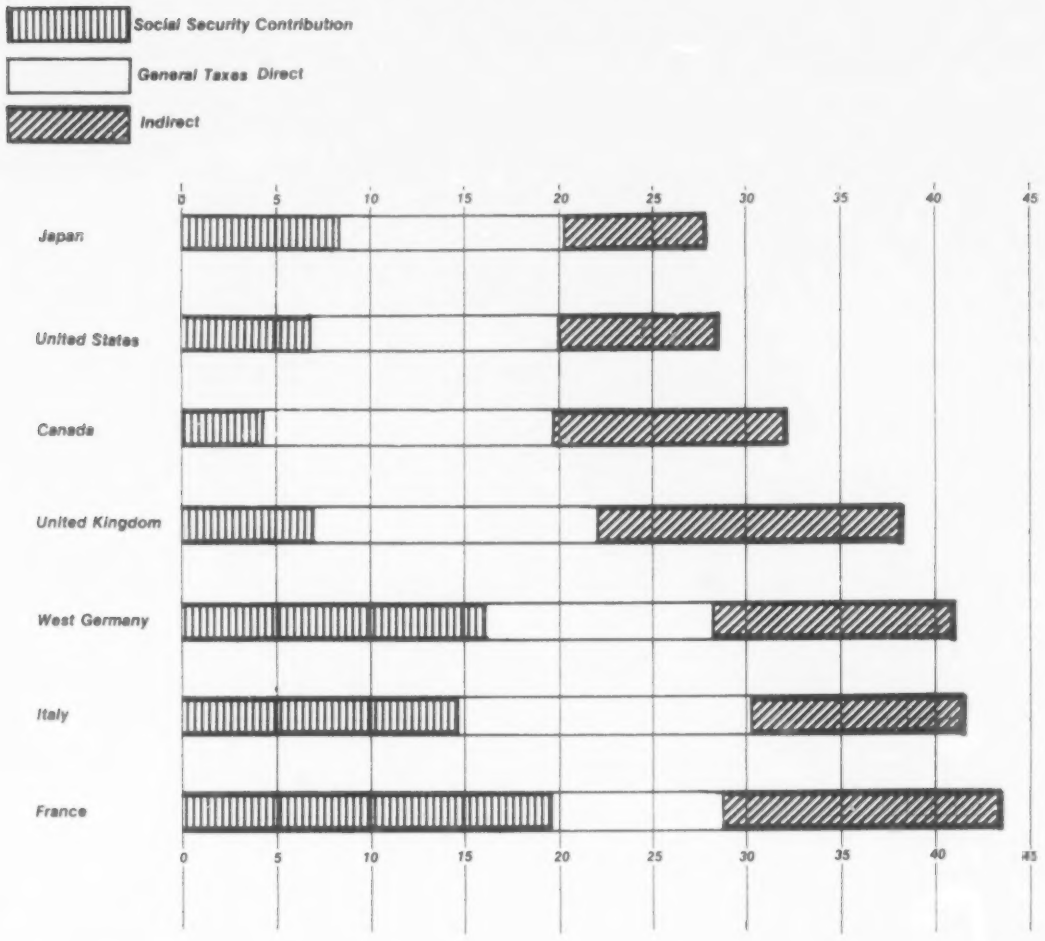
_____

Total Population this Page: 241,077,000

On July 23, 1987, the Census Bureau estimated U.S. Resident Population at 243,310,358.

COMPARATIVE TAX BURDEN, SELECTED INDUSTRIAL COUNTRIES, 1983

*Taxes as a Percent of GDP**



* GNP vs. GDP: Some countries report GDP rather than GNP. GDP (Gross Domestic Product) is the total market value of all goods and services produced within the domestic borders of a country over a particular period of time, normally a year. GNP (Gross National Product) equals GDP plus the income accruing to domestic residents arising from investment abroad less income earned in the domestic market accruing to foreigners abroad. In the U.S., and in most other countries, but not all, the gap between GNP and GDP is less than one percent.

(Statistical offices in Communist states prefer the net material income concept (NMI); their figures are -- aside from a general reevaluation -- adjusted to GNP by adding depreciation as well as those services that Marxists consider "non-productive")

World Eagle chart. Data, and chart, based on one in CIA Handbook of Economic Statistics, 1986. P.12.

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1. In which country do the people pay the highest social security tax?
2. Which country has the highest general direct taxes?
3. Which country has the highest indirect general taxes?
4. In which country do the people pay the highest percentage of total taxes?

TEACHING FROM GRAPHS

A Supervisor's Lesson Plan For Upper Elementary and Middle Grades

The information presented in graphs should be of interest to early adolescents. It should be timely, and it should be drawn from real rather than contrived data.

The objectives to be addressed are:

1. Students will be able to distinguish between a line and a bar graph.
2. Students will be able to conclude that it is useful to look at a a problem over time.
3. Students will be able to conclude that comparisons are also a useful way of looking at data.
4. Students will be able to make accurate mathematical comparisons of data from the bar graph.
5. Students will be able to make inferences and comparisons based on the two graphs in combination as well as individually.
6. Students will be able to make predictions and will be able to verbalize reasons for these predictions.

Let's compare a line graph with a bar graph. Line graphs usually illustrate change, while bar graphs illustrate comparisons at a given time and can also show comparisons and change over a period of time. An excellent example of this can be found in the March 1985 WORLD EAGLE, page 19. Copies of the page should be distributed to students. Calculators distributed to teams of students will also aid in later activities. (see facing page)

see page 9

A discussion of page 19 [in the March 1985 issue of WORLD EAGLE] might include the following. Some background may be necessary to familiarize students with the purpose of graphs in general.

1. Establish which is a line graph and which is a bar graph.
2. Look at the two axes of the line graph. Establish what each is portraying. Emphasize that the vertical (y) axis is comparing percent of students (x out of 100) rather than actual numbers of students.
3. Establish the central purpose of the graph: That some high school seniors have the opinion that using marijuana should be legal and others feel it should be a crime; and that the ratio of students holding these opinions has changed over time.
4. Ask:
    a) At what year did the fewest students feel marijuana should be a crime?
    b) At what year did the most students feel it should be legal?
    c) At what year did the same percent of students feel it should be legal as those who felt it should be a crime?
    d) What has happened since 1980?
    e) Add the percent of students who feel the use of marijuana should be legal to those who feel it should be a crime in any one year. (For example: In 1979, those who felt it should be legal was about 33%, while those who felt it should be a crime was about 25%. 33 plus 25 is 58 - not 100. Have students attempt to explain this.)
    f) Based on this graph what should the figures be in 1984? 1990? Discuss students' guesses. Encourage them to use the cross/recross pattern in order to examine their predictions.
5. Establish the purpose of the bar graph.
6. Establish that the y axis in this graph is in actual numbers rather than percentages, and that the horizontal axis does not reflect change over time. Through questioning, encourage students to conclude that comparisons are better shown by bars, while change is more easily shown in a continuous line. Ample time for a thorough discussion of this point is crucial.
7. Ask:
    a) What drugs are being compared?
    b) Why do you think alcohol and cigarettes are so much more frequently used than the others?
    c) How is the population different between these two graphs? Why is it important to know this?
8. The second graph refers to data for one year only -- 1982. Look at the line graph. In 1982, what was the dominant opinion regarding marijuana among high school seniors?
9. Based on the information in both graphs, can you tell whether more seniors smoked cigarettes, used marijuana, or used alcohol? Discuss.
10. What differences might there have been in the second graph if it had used data from 1977? Why?

TWO ASPECTS OF DRUG ABUSE

A Supervisor's Lesson Plan For Upper Elementary and Middle Grades

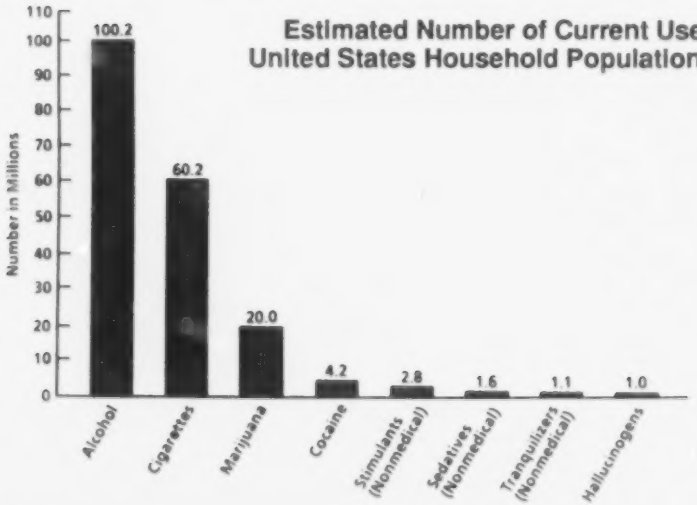
The following graphs and text at the bottom of the page, are from 1984 National Strategy: For Prevention of Drug Abuse and Drug Trafficking. By Drug Abuse Policy Office, Office of Policy Development, The White House.

This page was originally p.19 in the March 1985 issue of WORLD EAGLE.

Trends in Attitudes Regarding Marijuana Laws Among High School Seniors: 1975-1983

Source: NIDA, Monitoring the Future Study, 1983.

Estimated Number of Current Users[1] United States Household Population, 1982

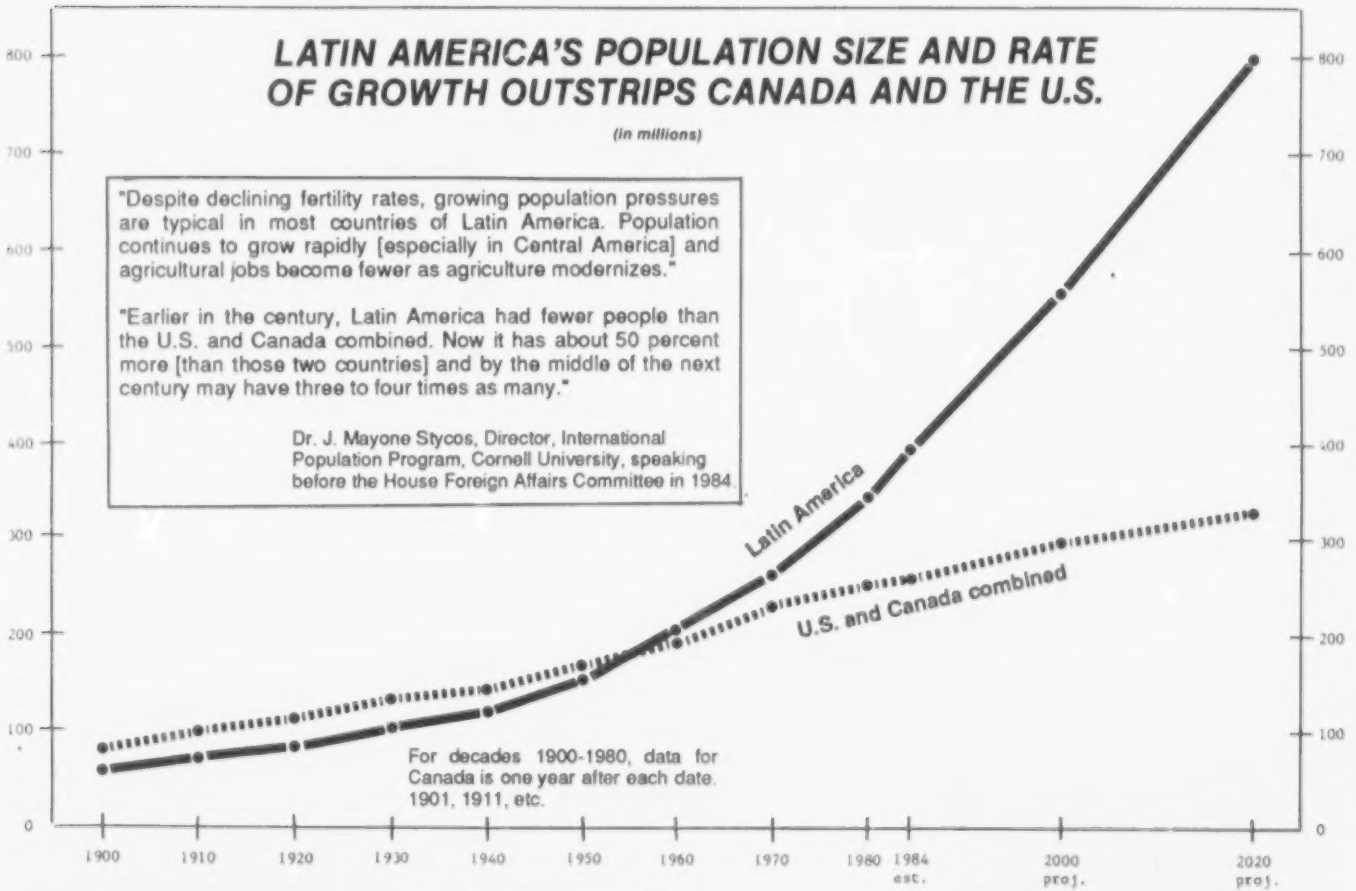


[1] People Who Used the Drug at Least Once During the Month Prior to Interview.
Source: NIDA, Population Projections Based on the National Survey on Drug Abuse, 1982.

"...We have halted the growth of drug abuse which occurred during the 1970s, but our battle is far from over. Millions of Americans, including one-fourth of our nation's young people, continue to abuse drugs or alcohol. The costs are measured in lost lives, troubled families and forsaken dreams..."

Ask:

1. What does this graph do that a single-line graph cannot do?
2. What is being compared? Over what time period? What happened in about 1955?
3. What do the numbers on the y axis mean?
4. Look at the x axis. What is unusual about it? What does "proj." mean?
5. How do you think the projected figures were established? Cover the graph beyond 1980. How was the information still showing used to get the rest of the graph?
6. If you had predicted population growth for Latin America beyond 1980, what would your predictions have been? Why?


LATIN AMERICA'S POPULATION SIZE AND RATE OF GROWTH OUTSTRIPS CANADA AND THE U.S.
(in millions)
"Despite declining fertility rates, growing population pressures are typical in most countries of Latin America. Population continues to grow rapidly [especially in Central America] and agricultural jobs become fewer as agriculture modernizes."
"Earlier in the century, Latin America had fewer people than the U.S. and Canada combined. Now it has about 50 percent more [than those two countries] and by the middle of the next century may have three to four times as many."
Dr. J. Mayone Stycos, Director, International Population Program, Cornell University, speaking before the House Foreign Affairs Committee in 1984.
Latin America
U.S. and Canada combined
For decades 1900-1980, data for Canada is one year after each date. 1901, 1911, etc.
0
100
200
300
400
500
600
700
800
1900
1910
1920
1930
1940
1950
1960
1970
1980
1984 est.
2000 proj.
2020 proj.

World Eagle chart based on: Latin America data for 1900-1980 from Wilkie & Perkal, Statistical Abstract of Latin America, Vol.23, p.116, t.623. Canadian data for 1901-1981 from 1984 Canadian Almanac & Directory, p.1011.

All data for 1984, 2000, 2020 from Population Reference Buruau, Inc., 1984 World Population Data Sheet.

Focusing on predicting outcomes and how data can be projected, the following discussion might accompany page 3 of the February 1985 issue of WORLD EAGLE.

(Prior to use, students need to know that Latin America includes all countries of Central and South America.)

THE 25 MOST POPULOUS COUNTRIES IN 1984 AND 2025

Medium Variant, Ranked By Size

PURPOSE: Understanding and extracting tabular data

	1984		2025	
	Country	Population (thousands)	Country	Population (thousands)
1.	China	1,051,551	China	1,460,086
2.	India	746,742	India	1,188,504
3.	USSR	275,761	USSR	367,127
4.	USA	235,681	Nigeria	338,105
5.	Indonesia	162,167	USA	312,686
6.	Brazil	132,648	Indonesia	255,334
7.	Japan	119,492	Brazil	245,809
8.	Pakistan	98,971	Bangladesh	219,383
9.	Bangladesh	98,464	Pakistan	212,811
10.	Nigeria	92,037	Mexico	154,085

table continues

THE 25 MOST POPULOUS COUNTRIES IN 1984 AND 2025

List examples from the 1984 list that are NOT on the 2025 list:

Country	On Which Continent
_____	_____
_____	_____
_____	_____
_____	_____

Give reasons why this is happening _____

_____

_____

Which country of the top ten in 1984 is projected to grow the fastest by 2025? _____
What percent of its 1984 population is it projected to have in 2025? _____% Additional questions asked but which cannot be responded to from the abbreviated table shown here: Which continent is projected to grow the fastest by 2025? _____ What percent of its 1984 population is it projected to have in 2025? _____%

Which countries on the 2025 list were not on the 1984 list?

Country	Continent	2025 rank
_____		
_____		
_____		
_____		

Which country holds the exact same rank on both lists, but is not in the top five? [It is not in the top ten, and does not appear in the abbreviated table above.] _____

Which country in the top five in LAND AREA is not even represented on either list? (Here you must check an atlas or almanac for areas.) _____

Which in the top ten of LAND AREA are not represented?

_____

_____

_____

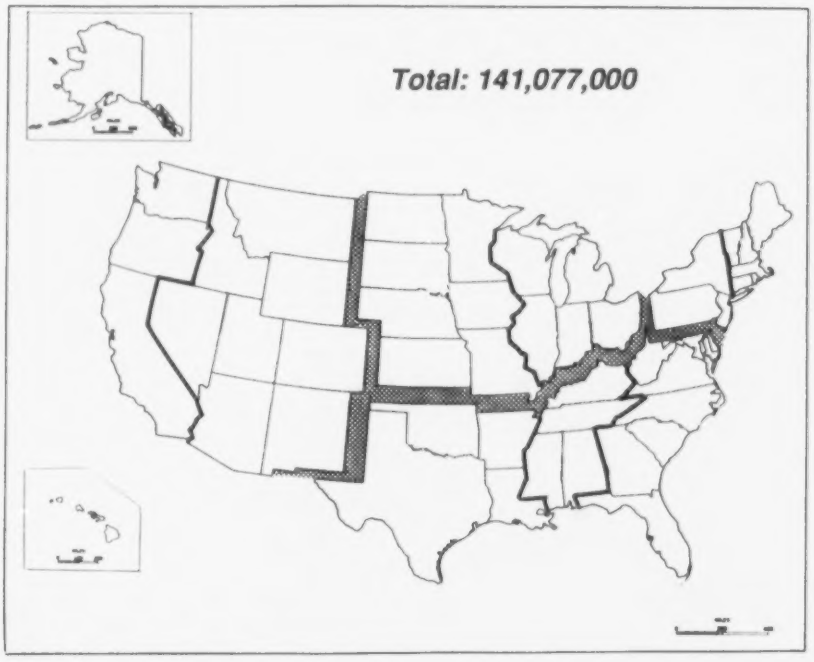
PURPOSE: For students to be able to read a table, rank-order States, compute a percentage of the total, and to identify the selected States on a blank outline map of the U.S. Possible "add-on" questions are also indicated.

Over 241 Million People Live in the U.S. A.
We Are The 4th Most Populous Country in the World

The U.S. Bureau of the Census Divides the U.S. Into Four Regions and Nine Census Divisions

-- Provisional Estimates of the July 1, 1986 U.S. Resident Population, by the Bureau of the Census, February 18, 1987 --

NORTHEAST	**50,018,000**
New England	12,737,000
CT	3,189,000
ME	1,174,000
MA	5,832,000
NH	1,027,000
RI	975,000
VT	541,000
Middle Atlantic	37,281,000
NJ	7,620,000
NY	17,772,000
PA	11,889,000
MIDWEST	**59,315,000**
East North Central	41,738,000
IL	11,553,000
IN	5,504,000
MI	9,145,000
OH	10,752,000
WI	4,785,000
West North Central	17,577,000
IA	2,851,000
KS	2,461,000
MN	4,214,000
MO	5,066,000
NE	1,595,000
ND	679,000
SD	708,000
SOUTH	**82,985,000**
South Atlantic	40,916,000
DC	626,000
DE	633,000
FL	11,675,000
GA	6,104,000
MD	4,453,000
NC	6,331,000
SC	3,378,000
VA	5,787,000
WV	1,919,000
East South Central	15,209,000
AL	4,053,000
KY	3,728,000
MS	2,625,000
TN	4,803,000
West South Central	26,861,000
AR	2,372,000
LA	4,501,000
OK	3,305,000
TX	16,682,000
WEST	**48,759,000**
Mountain	13,021,000
AZ	3,317,000
CO	3,267,000
ID	1,003,000
MT	819,000
NV	963,000
NM	1,479,000
UT	1,655,000
WY	507,000
Pacific	35,737,000
AK	534,000
CA	26,981,000
HI	1,062,000
OR	2,698,000
WA	4,463,000



1. What percent of the U.S. lives in the nine most populous states? _____
2. Shade and rank-order those states in the map above.
3. Which of the four Census Bureau Regions of the U.S. has the largest population? _____
4. How many people are there in the Region you live in? _____ In your Division? _____
5. Which countries of the world have more people than the U.S.? _____

PURPOSE: Transferring tabular data to a map

RANK OF 50 LARGEST U.S. CITIES BY POPULATION FROM CENSUSES OF 1980, 1970, 1900, AND 1850

[For meaning of symbols, see introduction]

Rank	1980 City	1980 Population	1970 City	1970 Population	1900 City	1900 Population	1850 City	1850 Population
1	New York, N.Y.	7 071 639	New York, N.Y.[1]	7 895 563	New York, N.Y.	3 437 202	New York, N.Y.	515 547
2	Chicago, Ill.	3 005 072	Chicago, Ill.	3 369 357	Chicago, Ill.	1 698 575	Baltimore, Md.	169 054
3	Los Angeles, Calif.	2 966 850	Los Angeles, Calif.	2 811 801	Philadelphia, Pa.	1 293 697	Boston, Mass.	136 881
4	Philadelphia, Pa.	1 688 210	Philadelphia, Pa.	1 949 996	St. Louis, Mo.	575 238	Philadelphia, Pa.	121 376
5	Houston, Tex.	1 595 138	Detroit, Mich.	1 514 063	Boston, Mass.	560 892	New Orleans, La.	116 375
6	Detroit, Mich.	1 203 339	Houston, Tex.	1 233 535	Baltimore, Md.	508 957	Cincinnati, Ohio	115 435
7	Dallas, Tex.	904 078	Baltimore, Md.	'905 787	Cleveland, Ohio	381 768	Brooklyn, N.Y.[2]	96 838
8	San Diego, Calif.	875 538	Dallas, Tex.	844 401	Buffalo, N.Y.	352 387	St. Louis, Mo.	77 860
9	Phoenix, Ariz.	789 704	Washington, D.C.[3]	'756 668	San Francisco, Calif.	342 782	Spring[4]	58 894
10	Baltimore, Md.	786 775	Cleveland, Ohio	'750 879	Cincinnati, Ohio	325 902	[illegible]	50 763
11	San Antonio, Tex.	785 880	Indianapolis, Ind.	'736 856	Pittsburgh, Pa.	[illegible]	[illegible][4]	47 223
12	Indianapolis, Ind.	700 807	Milwaukee, Wis.	'717 372	New Orleans, La.	[illegible]	[illegible]	46 774
13	San Francisco, Calif.	678 974	San Francisco, Calif.	715 674	Detroit, Mich.	[illegible]	[illegible]	46 601
14	Memphis, Tenn.	646 356	San Diego, Calif.	'697 471	Milwaukee, Wis.	[illegible]	[illegible]	43 194
15	Washington, D.C.	638 333	San Antonio, Tex.	654 153	Washington, D.C.	[illegible]	[illegible]	42 985
16	Milwaukee, Wis.	636 212	Boston, Mass.	641 [illegible]	[illegible]	[illegible]	[illegible]	42 261
17	San Jose, Calif.	629 442	Memphis, Tenn.	[illegible]	[illegible]	[illegible]	[illegible]	41 513
18	Cleveland, Ohio	573 822	St. Louis, Mo.	[illegible]	[illegible]	[illegible]	[illegible]	40 001
19	Columbus, Ohio	564 871	New Orleans, La.	[illegible]	[illegible]	[illegible]	[illegible]	38 894
20	Boston, Mass.	562 994	Phoenix, Ariz.	[illegible]	[illegible]	[illegible]	[illegible]	38 799
21	New Orleans, La.	557 515	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	36 403
22	Jacksonville, Fla.	540 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	'34 776
23	Seattle, Wash.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33 383
24	Denver, Colo.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30 780
25	Nashville-Davidson, Tenn.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29 963
26	St. Louis, Mo.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] City, N.Y.	28 785
27	Kansas City, Mo.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Richmond, Va.	27 570
28	El Paso, Tex.	[illegible]	[illegible]	[illegible]	[illegible]	125 560	Moyamensing, Pa.[4]	26 979
29	Atlanta, Ga.	[illegible]	[illegible]	[illegible]	[illegible]	118 421	Syracuse, N.Y.	22 271
30	Pittsburgh, Pa.	[illegible]	[illegible]	[illegible]	[illegible]	108 374	Allegheny, Pa.[5]	21 262
31	Oklahoma City, Okla.	[illegible]	[illegible]	[illegible]	[illegible] Conn.	108 027	Detroit, Mich.	21 019
32	Cincinnati, Ohio	[illegible]	[illegible]	[illegible]	[illegible], N.J.	105 171	Portland, Maine	20 815
33	Fort Worth, Tex.	[illegible]	[illegible]	[illegible]	Fall River, Mass.	104 863	Mobile, Ala.	20 515
34	Minneapolis, Minn.	[illegible]	[illegible]	383 062	St. Joseph, Mo.	102 979	New Haven, Conn.	'20 345
35	Portland, Oreg.	[illegible]	[illegible]	381 930	Omaha, Nebr.	102 555	Salem, Mass.	20 264
36	Honolulu, Hawaii	[illegible]	[illegible]	'379 967	Los Angeles, Calif.	102 479	Milwaukee, Wis.	20 061
37	Long Beach, Calif.	[illegible]	[illegible], Okla.	'368 164	Memphis, Tenn.	102 320	Roxbury, Mass.[6]	18 364
38	Tulsa, Okla.	[illegible]	[illegible], Ky.	'361 706	Scranton, Pa.	102 026	Hartford, Conn.	17 966
39	Buffalo, N.Y.	[illegible]	Oakland, Calif.	361 561	Lowell, Mass.	94 969	Columbus, Ohio	17 882
40	Toledo, Ohio	354 635	Long Beach, Calif.	'358 879	Albany, N.Y.	94 151	Utica, N.Y.	17 565
41	Miami, Fla.	346 865	Omaha, Nebr.	'346 929	Cambridge, Mass.	91 886	Charlestown, Mass.[7]	17 216
42	Austin, Tex.	345 496	Miami, Fla.	334 859	Portland, Oreg.	90 426	Worcester, Mass.	17 049
43	Oakland, Calif.	339 337	Tulsa, Okla.	'330 350	Atlanta, Ga.	89 872	Cleveland, Ohio	17 034
44	Albuquerque, N. Mex.	331 767	Honolulu, Hawaii	324 871	Grand Rapids, Mich.	87 565	New Bedford, Mass.	16 443
45	Tucson, Ariz.	330 537	El Paso, Tex.	322 261	Dayton, Ohio	85 333	Reading, Pa.	15 743
46	Newark, N.J.	329 248	St. Paul, Minn.	'309 866	Richmond, Va.	85 050	Savannah, Ga.	[illegible]
47	Charlotte, N.C.	314 447	Norfolk, Va.	307 951	Nashville, Tenn.	80 865	Cambridge, Mass.	15 215
48	Omaha, Nebr.	314 255	Birmingham, Ala.	300 910	Seattle, Wash.	80 671	Bangor, Maine	14 [illegible]
49	Louisville, Ky.	298 451	Rochester, N.Y.	'295 011	Hartford, Conn.	79 850	Norfolk, Va.	14 326
50	Birmingham, Ala.	284 413	Tampa, Fla.	'277 714	Reading, Pa.	78 961	Lynn, Mass.	14 257

1. Hand-out a copy of "Rank of 50 Largest U.S. Cities", and a map of the U.S. (blank or otherwise).
2. Have students place a dot for the location of each of the ten largest cities in 1850.
3. Have students do the same for each of the later three census years. But for each year, use a different color or draw one, two, or three circles around the dots.
4. What will be shown is that the country's population, as shown by size of cities, has shifted south and west over the decades.

[1]Population shown for 1900 and 1970 is for New York and its boroughs as constituted under the act of consolidation in 1898. [2]Brooklyn and other territory consolidated with New York in 1898. [3]City has been considered coextensive with the District of Columbia since 1895. [4]Spring Garden, Northern Liberties, Kensington, Southwark, and Moyamensing annexed by Philadelphia, in 1854. [5]Figure is that given in State census of 1852. Returns for 1850 were destroyed by fire. [6]Williamsburgh annexed by Brooklyn in 1854. [7]Figure for 1970 is for Metropolitan Government of Nashville and Davidson County; figures for previous years are for Nashville city. [8]Allegheny annexed by Pittsburgh in 1907. [9]Population of town, including city; town and city not returned separately. [10]Roxbury annexed by Boston in 1867. [11]Charlestown annexed by Boston in 1874.

Total Population of These 50 Cities in 1980 was 38,965,584

The 75 Largest Metropolitan Areas (Not Cities) Contain 53% of the U.S. Population.

Source: Bureau of the Census. Number of Inhabitants: United States Summary. Issue date: April 1983. P.1-181.

PURPOSE: The student will be able to
1) Follow written directions.
2) Order large population numbers from largest to smallest.
3) Use an atlas to locate countries and place them on an outline map of the world.
4) Extract data from a table to answer questions.
5) Draw conclusions from data given in table form.
6) Understand the global nature of labor force trends.

LABOR FORCE DISTRIBUTION IN WORLD'S 25 MOST POPULOUS COUNTIRES

(At the time this table was created in 1983, the 25 most populous countries had 80% of the world's population.)

	Percentage of Labor Force In					
	Agriculture		Industry		Services	
	1960	1980	1960	1980	1960	1980
Bangladesh	87	74	3	11	10	15
Brazil	52	30	15	24	33	46
Burma	--	67	--	10	--	23
China	--	69	--	19	--	12
Egypt	58	50	12	30	30	20
France	22	8	39	39	39	53
Germany (FRG)	14	4	48	46	38	50
India	74	69	11	13	15	18
Indonesia	75	55	8	15	17	30
Iran	54	39	23	34	23	27
Italy	31	11	40	45	30	44

table continues

DIRECTIONS

1. Using recent statistics, number the countries in order of population size from one (largest) to twenty-five (smallest).
   a. Write the population figure after the name of the country.
   b. To the left of the country, write 1 before the country with the largest population, 2 for the next largest country and so on.

2. To the far left, write the name of the continent on which the country is located.

3. Tell how many of the most populous countries are located in each of the continents listed below. If a country spans two continents, count it for both continents.

   _____ Asia
   _____ Africa
   _____ North America
   _____ South America
   _____ Europe
   _____ Australia

4. Which country had the largest percentages of its labor force in Services in 1980?

5. Which three countries had the highest percentages of their labor forces in Industry in 1980?

6. Which three countries had the highest percentages of their labor forces in Agriculture in 1980?

WORKTIME REQUIRED TO BUY SELECTED ITEMS

Approximate worktime required for average manufacturing employee to buy selected commodities in retail stores in Washington, DC, London, Paris, and Munich and at state-fixed prices in Moscow during March 1982.

See September 1988 issue of WORLD EAGLE for an update of this table.

(Minutes of Worktime Unless Otherwise Specified)

Commodity	Washington	Moscow	London	Paris	Munich
Bread 1 kg	16	17	16	18	27
Hamburger meat, beef 1 kg	37	123	63	80	70
Sausages 1 kg	33	160	51	75	75
Cod 1 kg	61	47	72	118	45
Sugar 1 kg	9	58	11	9	10
Butter 1 kg	55	222	50	47	52
Milk 1 liter	6	22	9	8	7
Cheese 1 kg	100	185	65	59	65
Eggs 10	8	55	16	13	12
Potatoes 1 kg	7	7	3	4	4
Cabbage 1 kg	9	12	10	9	7
Carrots 1 kg	11	19	13	7	10
Apples 1 kg	10	92	23	15	15
Tea 100 g	10	53	5	17	10
Beer 1 liter	11	16	18	7	8
Vodka .7 liter	61	452	131	107	74
Cigarettes 20	9	15	25	8	16
Weekly Basket family of 4 (hours)	18.6	53.5	24.7	22.2	23.3

table continues

(Part of a longer quiz) Using the accompanying table, answer the following questions:

12. Where are T-Shirts the most expensive?
    (a) Moscow (b) London (c) Paris (d) Munich

13. Where do jeans cost the most?
    (a) Moscow (b) London (c) Paris (d) Munich

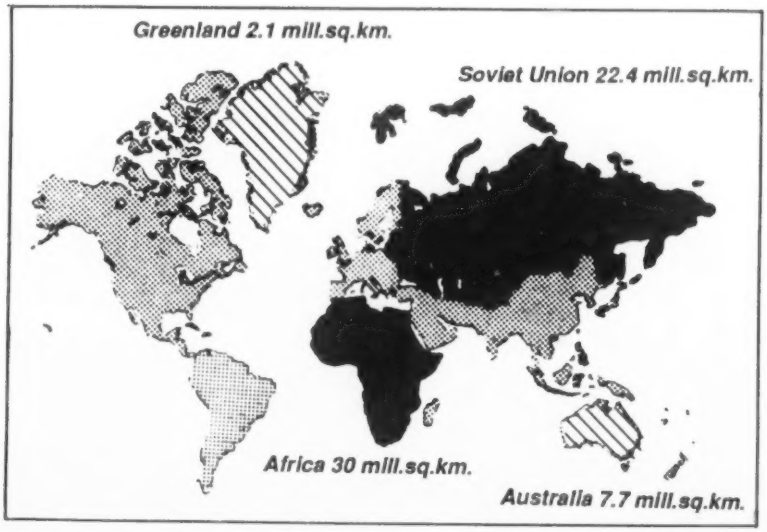
14. Where is it cheapest to take a cab?
    (a) Washington (b) London (c) Moscow (d) Paris

15. Where is it cheapest to buy potatoes?
    (a) Washington (b) Moscow (c) London (d) Paris

16. The numbers on this chart represent:
    (a) the amount of money it costs to buy something in these five cities
    (b) the number of minutes or hours you would have to work to buy something in these five cities
    (c) The hourly rate for workers in these five cities

17. On the average, workers must work longer for most products in:
    (a) USA (b) USSR (c) United Kingdom (d) France

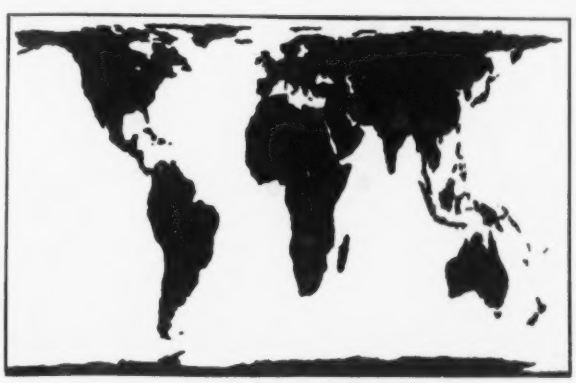
PURPOSE: To understand that the Mercator Projection distorts, why it does, and to know there are several alternatives.



Gerhard Kremer Mercator, Flemish geographer, 1512-1594. Known as the inventor of a method of projection called by his name in which meridians (of longitude) and parallels (of latitude) cut each other at right angles, and are both represented by straight lines, which has the effect of enlarging the degrees of latitude as they recede from the equator.

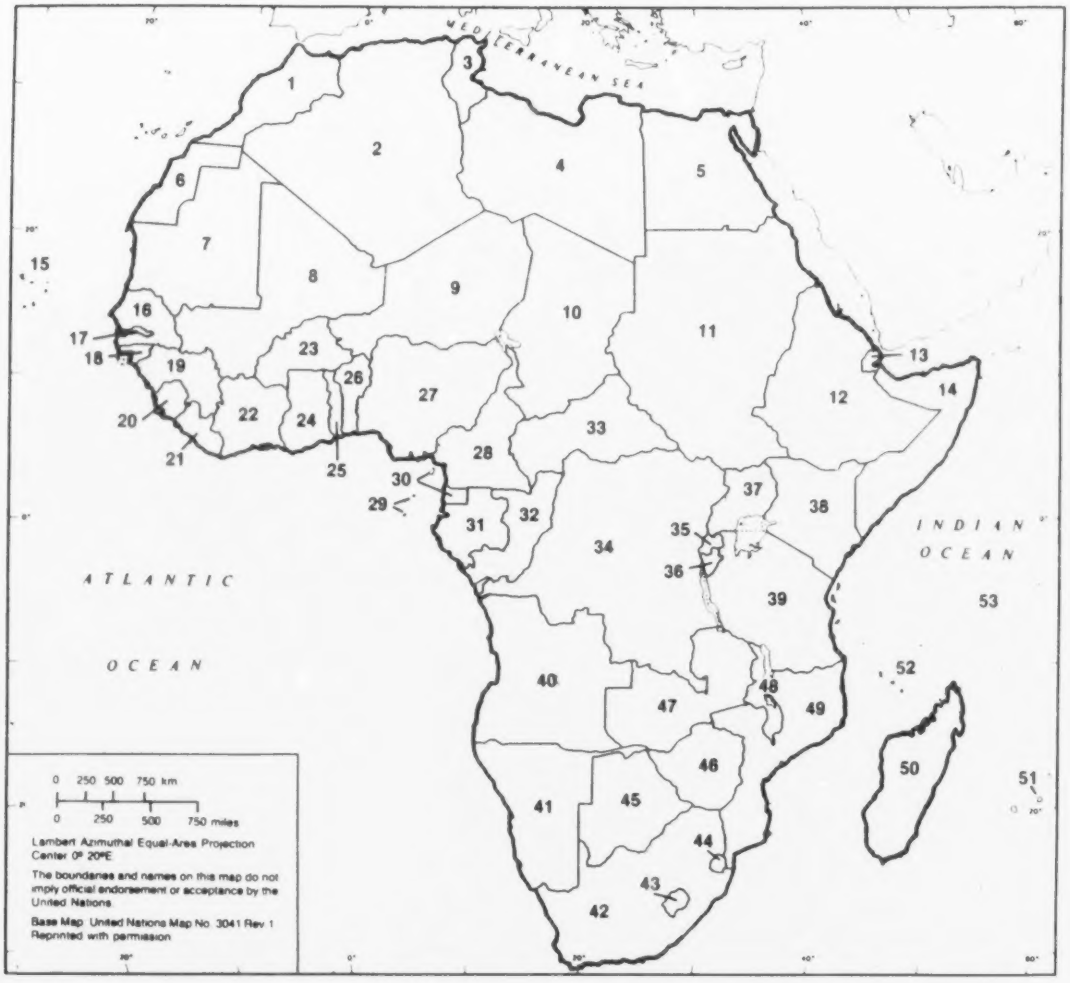
Source: Adapted from "Encyclopedia Americana", International Edition, 1979. Vol.18, p.655, col.1.

Two of the more popular alternatives to the Mercator Projection are (1) An equal area projection. The World Bank often uses the Albers Equal Area Projection which it advises maintains correct areas for all countries, albeit at the cost of some distortions in shape, distance, and direction.and (2) The (Professor Arno) Peters Projection which shows the proportions of the land surface area more accurately than does the more familiar Mercator Projection.



NAME THEM!

PURPOSE: To have students be able to identify the countries of Africa on a blank outline map. The map can also be used to locate major African cities and the distances between them "as the crow flies".



1 Morocco, 2 Algeria, 3 Tunisia, 4 Libya, 5 Egypt, 6 Western Sahara, 7 Mauritania, 8 Mali, 9 Niger, 10 Chad, 11 Sudan, 12 Ethiopia, 13 Djibouti, 14 Somalia, 15 Cape Verde, 16 Senegal, 17 Gambia, 18 Guinea-Bissau, 19 Guinea, 20 Sierra Leone, 21 Liberia, 22 Cote d'Ivoire, 23 Burkina Faso, 24 Ghana, 25 Togo, 26 Benin, 27 Nigeria, 28 Cameroon, 29 São Tomé and Príncipe, 30 Equatorial Guinea, 31 Gabon, 32 Congo Republic, 33 Central African Republic, 34 Zaire, 35 Rwanda, 36 Burundi, 37 Uganda, 38 Kenya, 39 Tanzania, 40 Angola, 41 Namibia, 42 South Africa, 43 Lesotho, 44 Swaziland, 45 Botswana, 46 Zimbabwe, 47 Zambia, 48 Malawi, 49 Mozambique, 50 Madagascar, 51 Mauritius, 52 Comoros, 53 Seychelles.

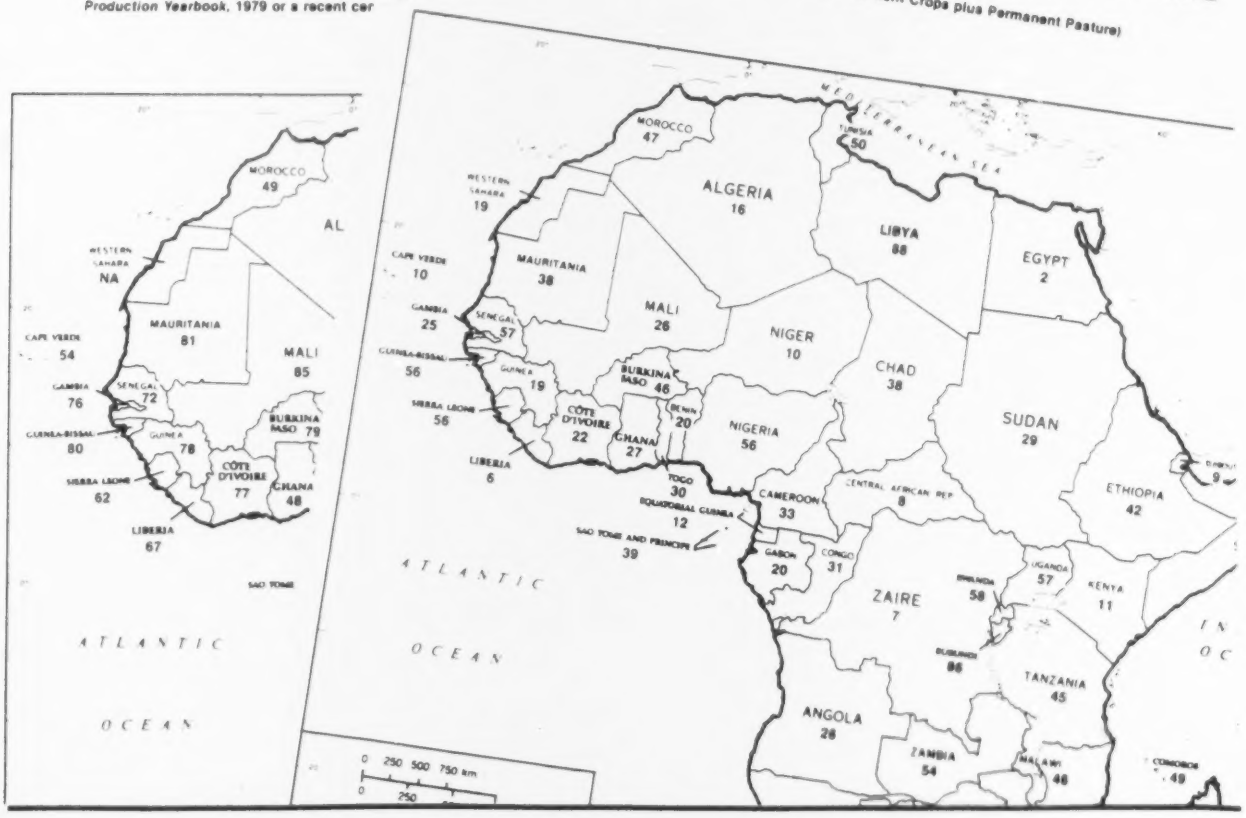
PURPOSE: To retrieve data, compare them, decide on standards for "advantaged" and "disadvantaged" nations, and to make and sustain generalizations.

PERCENT OF LABOR FORCE ENGAGED

Definition of agriculture also includes hunting, forest
Production Yearbook, 1979 or a recent ear

PERCENT OF LAND IN AGRICULTURE

(Arable and Permanent Crops plus Permanent Pasture)



RETRIEVAL CHART: Percent of Land in Agriculture
Percent of Labor Force Engaged in Agriculture

Nation	% of Land Agriculture	% Labor in Agriculture	Conclusions	Advantaged (A) Disadvantaged (D)
Egypt	3	50		
Ethiopia	54	79		
Niger	56	87		
South Africa	78	28		
Zaire	7	74		

Inferences from the Retrieval Chart: _____

_____

_____

_____

_____

MAP INTERPRETATION

An assignment by a junior high teacher. In addition to answering 43 questions, students were instructed to do specific color-coding and labeling on the eight maps provided.

Using the eight maps of Burma attached here which contain a variety of data (Political, Physical, Climates, Natural Resources, States and Division, Languages and Cultures, History, and Wildlife):

Part I. Mark an "A" for those terms which apply to Upper Burma and a "B" for those which apply to Lower Burma.

1. _____ mountainous
2. _____ valleys and lowlands
3. _____ largest population in country
4. _____ smallest population in country
5. _____ cooler climates
6. _____ warmer climates
7. _____ wetter climates
8. _____ drier climates
9. _____ forests
10. _____ cultivated land
11. _____ tropical crops
12. _____ large variety of crops

Multiple Choice. Choose the One Best Answer for Each of These Questions.

13. _____ What are the two main physical features that determine Burma's boundaries? (a) rivers and coastlines, (b) rivers and mountains, (c) coastlines and mountains, (d) coastlines and plateaus, (e) latitude and longitude lines

14. _____ Which is easier to do in Burma - to travel from (a) east to west, or, (b) north to south?

15. _____ Why did you choose your answer to question 14? (a) because it is a shorter distance east to west instead of north to south, (b) because the rivers generally run from north to south, (c) because the mountains generally run from north to south, (d) because Upper Burma is in the north and Lower Burma is in the south, (e) because the climates are similar as one travels from east to west

16. _____ As one travels from north to south in Burma the elevation, (a) gets higher, (b) gets lower, (c) stays the same, (d) gets more unusual, (e) gets warmer

17 _____ Which of these statements proves the answer to question 16 is correct? (a) there are more cities in the south than in the north, (b) the climate gets colder in the north than in the south, (c) there are more states and divisions in the south than in the north, (d) there are more cultivated crops in the south than in the north, (e) there have been more ancient civilizations develop in southern Burma than in northern Burma.

18. _____ True (a) or False (b) Burma's mountains affect its climates

19. _____ True (a) or False (b) Upper and Lower Burma are determined largely by climate and elevation.

20. _____ Cultivated land is almost always located near (a) coastlines, (b) mountains, (c) plateaus, (d) lowlands and river valleys, (e) warmer climates

21. _____Most of the people in Burma live near what land? (a) cultivated land, (b) forests, (c) coastlines, (d) mountains, (e) islands

22. _____ Minerals tend to be found in (a) mountains and plateaus, (b) coastlines, (c) islands, (d) plains, valleys, and lowlands, (e) heavily populated areas.

23. _____Which has the greatest effect on the boundaries of Burma's states and divisions? (a) physical features, (b) cultural groups, (c) climates, (d) history, (e) natural resources

24. _____ In which part of Burma are its states? (a) mostly Upper Burma (b) mostly Lower Burma (c) mostly eastern Burma (d) mostly western Burma (e) throughout all of Burma

25. _____ In which part of Burma are its divisions? (a) mostly Upper Burma (b) mostly Lower Burma (c) mostly eastern Burma (d) mostly western Burma (e) throughout all of Burma

26. _____ From what language group do people in Burma's divisions tend to be? (a) Sino-Tibetan (b) Austroasiatic (c) Malayo-Polynesian (d) Thai (e) all of these

27. _____ Where is there the greatest variety of cultural groups in Burma? (a) in the lowlands (b) along the coastline (c) by the delta (d) near the major cities (e) in the highlands

VIEWING GLOBAL PERSPECTIVE MAPS

People's Republic of China As Seen From Japan

(One of the set of ten famous Global Perspective Maps created by Russell H. Lenz, Chief Cartographer [Retired] of The Christian Science Monitor, and available from World Eagle, Inc.

1. Must North always be at the top of a map? (No)
2. When a map does not have North at the top, have any geographic facts changed? (No)
3. What has changed? (Your perspective)
4. Here in the U.S., is it accurate to say that cold weather is coming down from Canada?
5. What if the weather map were hung upside-down, could you say that cold weather is coming up from Canada?
6. Would a map of the world or a globe (which?) permit you to trace direction from North to South to North to South? And from East to West to East to West?

-- NOTES --

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